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**Amendments to the Claims:**

This listing of claims will replace all versions and listings of claims in the application:

**Listing of Claims:**

**What is claimed is:**

1. (currently amended) An optical spectrum analyzer for determining a parameter of an optical input signal, the optical spectrum analyzer comprising:

a collimator to collimate the input signal;

a light dispersion element that diffracts the collimated light into spectrally spaced optical wavelengths;

a reflector that reflects the spectrally-spaced optical wavelengths back to the light dispersion element;

a first mirror disposed adjacent to the ~~reflector that~~ light dispersion element wherein the first mirror receives light from the reflector to provide ~~provides~~ an optical reference signal indicative of a ~~the~~ first relative position of the reflector; and

a pivoting mechanism that rotates the reflector to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

2. (original) The optical spectrum analyzer of claim 1, further includes a first optical waveguide projects the optical signal and a second optical waveguide for receiving at least one of the spectrally-spaced optical wavelength bands.

3. (original) The optical spectrum analyzer of claim 1, wherein a first optical waveguide projects the optical signal and receives at least one of the selected optical wavelength bands.

4. (original) The optical spectrum analyzer of claim 1, further includes an optical detector that senses a parameter of the at least one selected optical wavelength band and provides a sensed signal indicative of the parameter of the at least one selected optical wavelength band.

5. (original) The optical spectrum analyzer of claim 1, further includes a position sensor that provides a position signal indicative of the displacement of the reflector.

6. (currently amended) An optical spectrum analyzer for determining a parameter of an optical input signal, the optical spectrum analyzer comprising:

a collimator to collimate the input signal;

a light dispersion element that diffracts the collimated light into spectrally spaced optical wavelengths;

a reflector that reflects the spectrally-spaced optical wavelengths back to the light dispersion element;

a first mirror disposed adjacent to at least one of the reflector and light dispersion element that provides an optical reference signal indicative of a first relative position of the reflector;

~~The optical spectrum analyzer of claim 1, further includes a~~ second mirror disposed adjacent to the at least one of the reflector and light dispersion element to provide a second relative position of the reflector; and

a pivoting mechanism that rotates the reflector to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

7. (original) The optical spectrum analyzer of claim 1, wherein the pivoting mechanism further includes an actuator for moving the reflector about a pivot point.

8. (original) The optical spectrum analyzer of claim 1, wherein the reflector is at least one of a flat mirror, a folded mirror, a roof prism and a reflecting dihedron.

9. (currently amended) An optical spectrum analyzer for determining a parameter of an optical input signal, the optical spectrum analyzer comprising:

a collimator to collimate the input signal;

a light dispersion element that diffracts the collimated light into spectrally spaced optical wavelengths;

a reflector that reflects the spectrally-spaced optical wavelengths back to the light dispersion element;

a first mirror disposed adjacent to the reflector that provides an optical reference signal indicative of a first relative position of the reflector;

~~The optical spectrum analyzer of claim 1, further includes~~ a cylindrical lens disposed between the light dispersion element and the reflector; and

a pivoting mechanism that rotates the reflector to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

10. (original) The optical spectrum analyzer of claim 1, wherein the light dispersion element is a diffraction grating.

11. (original) The optical spectrum analyzer of claim 1, wherein the collimator includes at least one of an aspherical lens, an achromatic lens, a doublet or a laser diode doublet.

12. (original) The optical spectrum analyzer of claim 2, further comprising a pair of optical detectors that respectively detect the output of the first and second optical waveguides.

13. (original) The optical spectrum analyzer of claim 1, further comprising an optical source to provide light for projecting onto and reflecting off of the first mirror.

14. (currently amended) An optical spectrum analyzer for determining a parameter of an optical input signal, the optical spectrum analyzer comprising:

a collimator to collimate the input signal;

a light dispersion element that diffracts the collimated light into spectrally spaced optical wavelengths;

a reflector that reflects the spectrally-spaced optical wavelengths back to the light dispersion element, wherein the light dispersion element diffracts the reflected optical wavelengths back to the collimator; and

a ~~pivoting mechanism~~ resonant actuator that rotates the reflector to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

15. (original) The optical spectrum analyzer of claim 14, further includes a first optical waveguide projects the optical signal and a second optical waveguide for receiving at least one of the spectrally-spaced optical channels.

16. (original) The optical spectrum analyzer of claim 14, wherein a first optical waveguide projects the optical signal and receives at least one of the selected optical channels.

17. (original) The optical spectrum analyzer of claim 14, further includes an optical detector that senses a parameter of the at least one selected optical channel and provides a sensed signal indicative of the parameter of the at least one selected optical channel.

18. (original) The optical spectrum analyzer of claim 14, further includes a position sensor that provides a position signal indicative of the displacement of the reflector.

19. (currently amended) The optical spectrum analyzer of claim 16, ~~14,~~ further comprising at least a second optical waveguide for projecting a second input signal to the collimator to select an optical channel of the second input signal.

20. (original) The optical spectrum analyzer of claim 14, wherein the pivoting mechanism further includes an actuator for moving the reflector about a pivot point.

21. (original) The optical spectrum analyzer of claim 14, wherein the reflector is at least one of a flat mirror, a folded mirror, a roof prism and a reflecting dihedron.

22. (currently amended) An optical spectrum analyzer for determining a parameter of an optical input signal, the optical spectrum analyzer comprising:

a collimator to collimate the input signal;

a light dispersion element that diffracts the collimated light into spectrally spaced optical wavelengths;

a reflector that reflects the spectrally-spaced optical wavelengths back to the light dispersion element, wherein the light dispersion element diffracts the reflected optical wavelengths back to the collimator; and

~~The optical spectrum analyzer of claim 14, further includes~~ a cylindrical lens disposed between the light dispersion element and the reflector; and

a pivoting mechanism that rotates the reflector to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

23. (original) The optical spectrum analyzer of claim 14, wherein the light dispersion element is a diffraction grating.

24. (original) The optical spectrum analyzer of claim 14, wherein the collimator includes at least one of an aspherical lens, an achromatic lens, a doublet or a laser diode doublet.

25. (original) The optical spectrum analyzer of claim 15, further comprising a pair of optical detectors that respectively detect the output of the first and second optical waveguides.

26. (canceled)

27. (currently amended) The optical spectrum analyzer of claim 16, ~~14,~~ further comprising an optical switch to selectively provide one of a plurality of optical input signals to the first optical waveguide.

28. (original) The optical spectrum analyzer of claim 14, further including a coupling device to redirect the output signal back to the collimator to again diffract off the light dispersion element onto the reflector and reflected back to the dispersion element and collimator to provide a quadruple pass optical spectrum analyzer.

29. (canceled)

30. (new) The optical spectrum analyzer of claim 14, wherein the resonant actuator is a magnetic pulse drive.

31. (new) The optical spectrum analyzer of claim 1, further comprising at least a second optical waveguide for projecting a second input signal to the collimator to select an optical channel of the second input signal.

32. (new) The optical spectrum analyzer of claim 7, wherein the pivoting mechanism is a resonant actuator.

33. (new) The optical spectrum analyzer of claim 32, wherein the resonant actuator is a magnetic pulse drive.

34. (new) The optical spectrum analyzer of claim 1, wherein the light reflecting off the first mirror propagates substantially along the same optical path as the optical input signal.

35. (new) The optical spectrum analyzer of claim 1, wherein the light reflecting off the first mirror is a portion of the optical input signal.

36. (new) The optical spectrum analyzer of claim 1, wherein the light reflecting off the first mirror is provided by a separate light source.